What is claimed:

1. A process for treating wastewater containing liquid and solids, comprising the steps of: providing a process vessel for containing said liquid and solids; establishing a plurality of zones in an upper portion of said processing vessel including an aerobic zone, an anoxic zone and a clarification zone; feeding the wastewater into said processing vessel including said plurality of zones; maintaining aerobic conditions in said aerobic zone; maintaining anoxic conditions in said anoxic zone; maintaining clarification conditions in said clarification zone; maintaining a facultative zone in a middle portion of said process vessel below said aerobic zone, said anoxic zone and said clarification zone; maintaining an anaerobic zone in a lower portion of said processing vessel below said facultative zone; supplying air into said aerobic zone and creating an upflow in said aerobic zone; causing said upflow from said aerobic zone to create a downflow into said anoxic zone; causing a first portion of said downflow from said anoxic zone to pass into said upflow of said aerobic zone; causing a second portion of said downflow from said anoxic zone to create an upflow into said clarification zone; withdrawing substantially clarified liquid from said clarified zone; and causing settling of a portion of said solids from said plurality of zones into said anaerobic zone; and withdrawing substantially solids from about the bottom of said anaerobic zone.

2. The process as recited in claim 1 including feeding said wastewater into about the top of said aerobic zone.

3. The process as recited in claim 1, wherein said anoxic zone is annularly disposed about said aerobic zone.

4. The process as recited in claim 1 wherein said clarification zone is annularly disposed about said anoxic zone.

5. The process as recited in claim 1 further including the step of feeding air into at about the bottom of said aerobic zone.

6. The process as recited in claim 1 further including the step of withdrawing substantially said clarified liquid from about the top of said clarification zone.

7. A process for treating wastewater containing liquid and solids, comprising:

(a) providing a multi-zone vessel;

(b) providing a feedwater inlet for feeding wastewater into said vessel;

(c) creating in an upper portion of said vessel (i) an aerobic zone in the center of said upper portion, (ii) an anoxic zone contiguous to said aerobic zone, and (iii) a clarification zone for clarified liquid contiguous to said anoxic zone;

(d) establishing upflow conditions in said aerobic zone;

(e) providing a first passage for enabling said upflow conditions from said aerobic zone to pass into the downflow of said anoxic zone;

(f) providing a second passage for enabling at least a portion of the downflow from said anoxic zone to pass into establish upflow conditions in said clarification zone;

(g) providing a third passage for enabling at least a portion of the downflow conditions from said anoxic zone to pass into the upflow conditions of said aerobic zone;

(h) providing an air inlet for feeding air into said aerobic zone;

(i) establishing a facultative zone in said vessel disposed below said aerobic zone;

(j) establishing an anaerobic zone in said vessel at a level substantially below said aerobic zone;

(k) providing a clarified liquid effluent outlet in said vessel for withdrawing substantially clarified liquid from said upflow of said clarification zone;

(l) providing a substantially solids outlet disposed at about the bottom of said anaerobic zone;

(m) supplying said wastewater into said vessel through said feedwater inlet;

(n) supplying air into said system through said air inlet;

(o) effecting settling of solids into said anaerobic zone;

(p) withdrawing substantially solids from said system through said substantially solids outlet; and,

(q) withdrawing said clarified liquid from said upflow of said clarification zone through

said clarified liquid effluent outlet.

9. The process as recited in claim 8 further comprising feeding said wastewater into about the upper portion of said aerobic zone through said feedwater inlet.

10. The process as recited in claim 8 further comprising feeding said wastewater into about the lower portion of said aerobic zone through said feedwater inlet.

11. The process as recited in claim 8 wherein said anoxic zone is annularly disposed about said aerobic zone.

12. The process as recited in claim 8 wherein said clarification zone is annularly disposed about said anoxic zone.

13. The process as recited in claim 8 further comprising feeding air into at about the bottom of said aerobic zone.

14. The process as recited in claim 8 further comprising withdrawing said clarified liquid from about the top of said clarification zone.

15. The process as recited in claim 8 further comprising withdrawing substantially solids from about the bottom of said anaerobic zone.

16. A single vessel system for treating wastewater, comprising: vessel means; a source of wastewater; a plurality of upper treatment zones in said vessel means including an aerobic zone, disposed in the upper center portion of vessel means, an anoxic zone annularly disposed about said aerobic zone, a clarification zone annularly disposed about said anoxic zone; an inlet for feeding said wastewater into said vessel means including said upper treatment zones; first fluid flow inducing means for creating upflow fluid conditions in said aerobic zone; second fluid flow inducing means for creating downflow fluid conditions in said anoxic zone; third fluid flow inducing means for creating upflow fluid conditions in said clarification zone; a first passage fluidly interconnecting said anoxic zone with said clarification zone for enabling at least a portion of said downflow fluid conditions from said anoxic zone to pass into said upflow fluid flow conditions of said clarification zone; a second passage fluidly interconnecting said anoxic zone and said aerobic zone for enabling at least a portion of said

downflow fluid conditions from said anoxic zone to pass into said upflow fluid conditions of said aerobic zone; a third passage fluidly interconnecting said aerobic zone and said anoxic zone for enabling said upflow fluid conditions from said aerobic zone to pass into said downflow fluid conditions of said anoxic zone; a facultative zone in said vessel means disposed in vessel means at a level below said aerobic zone; an anaerobic zone in said vessel means disposed below said facultative zone; a sludge zone disposed in the bottom of said vessel means; an air source; air outlet means for feeding air from said air source into said aerobic zone; a liquid effluent outlet for withdrawing said clarified liquid from said clarification zone; and a sludge removal facility disposed at about the bottom of said anaerobic zone for facilitating the discharge of substantially solids.

17. The system as recited in claim 16, wherein said sludge removal facility is a sludge rake for facilitating said discharge of substantially solids.

18. The system as recited in claim 16, wherein said air source is an oxygenation blower for enabling said feeding of air into said aerobic zone.

19. The system as recited in claim 16, wherein said feedwater source for said feeding of said wastewater into said system is a lifting station.

20. The system as recited in claim 16, further comprising a substantially cylindrical baffle annularly disposed in said vessel means for separating said aerobic zone from said anoxic zone.

21. The system as recited in claim 16, further comprising a substantially cylindrical baffle annularly disposed in said vessel means for separating said anoxic zone from said clarification zone.

22. The system as recited in claim 16, further comprising a nutrient dosing pump for adding beneficial biological nutrient to said inlet for said feeding of said wastewater into said vessel means.

23. A method for wastewater treatment comprising the steps of: providing first cylindrical barrier means to establish an aerobic zone located in the center of a single treatment vessel

supplied with effluent; introducing air into the bottom of said aerobic zone to create aerobic conditions and creating an upflow through said aerobic zone; employing said aerobic zone for aerobic processing, including breaking down long carbon compound chains and oxidizing volatile fatty acids; providing a second cylindrical barrier means surrounding and spaced from said first cylindrical barrier means to establish an anoxic zone; means for transferring a portion of said upflow in said aerobic zone to said anoxic zone for anoxic processing; creating a downflow in said anoxic zone; merging a portion of said downflow from said anoxic zone into said upflow in said aerobic zone; interacting said aerobic processing and said anoxic processing in said aerobic zone through said merging for removing nitrates produced from said aerobic processing; providing a clarification zone in said vessel surrounding said anoxic zone; drawing a portion of said downflow from said anoxic zone into said upflow in said clarification zone; discharging clarified liquid from said clarification zone; creating a facultative transition zone below said aerobic zone, said anoxic zone and said clarification zone; using anaerobic conditions below said facultative transition zone to create an anaerobic zone to absorb settled solids gravitating from said aerobic zone, said anoxic zone, said clarification zone and said facultative zone; employing said anaerobic zone for anaerobic processing, including synthesis of said settled solids into said volatile fatty acids; dispersing said volatile fatty acids into said aerobic zone; causing the removal of phosphorus through said aerobic processing interacting with said anaerobic processing in said anaerobic zone; collecting sludge that settles from said aerobic zone, said anoxic zone, said clarification zone, said facultative zone and said anaerobic zone; and discharging said sludge from the bottom of said vessel.

24. The method as recited in claim 23 further comprising the addition of a beneficial biological nutrient to said influent.